

CLAIMS

1. A porous hollow fiber, comprising a vinylidene fluoride resin having a weight-average molecular weight of at least 3×10^5 , having a water permeation rate F ($\text{m}^3/\text{m}^2 \cdot \text{day}$) measured at a pressure difference of 100 kPa and at a water temperature of 25°C in a range of test length $L=0.2-0.8(\text{m})$ and expressed in a linear relationship with the test length L of: $F=C \cdot L+F_0$ (formula 1) and satisfying requirements (a)-(d) shown below:
 - (a) a average slope C (/day) of: $-20 \leq C \leq 0$,
 - 10 (b) an intercept (basic permeability) F_0 ($\text{m}^3/\text{m}^2 \cdot \text{day}$) of: $F_0 \geq 30$,
 - (c) a relation between F_0 ($\text{m}^3/\text{m}^2 \cdot \text{day}$) and an average pore diameter P (μm) according to half-dry method of $F_0/P \geq 300$, and
 - (d) an outer diameter of at most 3 mm.
- 15 2. A porous hollow fiber according to claim 1, further satisfying a relationship of : $F_0/D_i^4 \leq 75$ between the basic permeability F_0 ($\text{m}^3/\text{m}^2 \cdot \text{day}$) and an inner diameter D_i (mm) of the hollow fiber.
- 20 3. A porous hollow fiber according to claim 1 or 2, comprising a vinylidene fluoride resin having a weight-average molecular weight of at least 4×10^5 .
4. A porous hollow fiber according to any one of claims 1-3, comprising a vinylidene fluoride resin having a ratio M_w/M_n of at least 2.0 between a weight-average molecular weight (M_w) and a number-average molecular weight (M_n) thereof.
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5. A porous hollow fiber according to claim 4, wherein the vinylidene fluoride resin comprises 2-49 wt.% of a first vinylidene fluoride resin having a weight-average molecular weight (Mw_1) of 4×10^5 - 12×10^5 and 51-98 wt.% of a second vinylidene fluoride resin having a weight-average molecular weight (Mw_2) of 1.5×10^5 - 6×10^5 provided that the weight-average molecular weight (Mw_1) of the first vinylidene fluoride resin and the weight-average molecular weight (Mw_2) of the second vinylidene fluoride resin satisfy a ratio Mw_1/Mw_2 of at least 1.2.
6. A porous hollow fiber according to any one of claims 1-5, having an inner diameter of 0.8-2.98 mm and a wall thickness of 0.01-0.4 mm.
7. A process for producing a porous hollow fiber of vinylidene fluoride resin, comprising : providing a composition by adding, to 100 wt. parts of a vinylidene fluoride resin having a weight-average molecular weight of at least 3×10^5 , a plasticizer and a good solvent for vinylidene fluoride resin in a total amount of 100-300 wt. parts so that the good solvent occupies 8-22 wt.% therein ; melt-extruding the composition into a form of hollow fiber; introducing the hollow fiber into an inert liquid while injecting an inert gas into a hollow part thereof to cool and solidify the hollow fiber; and extracting the plasticizer to recover a porous hollow fiber.
8. A process according to claim 7, further comprising a step of stretching before or after the extraction of the plasticizer.